

REMARKS

In the last office action, which was made final, the Examiner rejected claims 1 and 3-7 as being unpatentable over Cissel (U.S. Patent No. 3,084,940) in view of Lundberg (U.S. Patent No. 5,839,975) and Rigal et al. (U.S. Patent No. 5,547,427), under 35 U.S.C. 103 (a).

In response to the Examiner's rejection, Applicant has amended claim 1 and submits the following remarks on the Examiner's comments, while comparing the present invention with the references cited by the Examiner.

THE SCOPE OF THE CLAIMED INVENTION

The scope of the present invention, as set forth in amended claim 1, is a wood golf club which comprises: a head having a face on a front, the head defining a toe at one end of the face and a heel at the other end thereof, having an outer shell made of metallic shells, defining a hollow interior, the head also having a rearmost side opposite the face on the front; a shaft connected to a heel side of the head; and one or more reinforcing members provided separately inside the outer shell of the head, each of the reinforcing members being tabular, projecting toward the hollow interior, so formed that it is provided nearly along a cross-sectional area of the hollow interior defined in a toe-to-heel direction, a preset distance away from the face to define a preset space therebetween, wherein: each reinforcing member is frame-shaped, having an opening on a center portion thereof, and makes up 20% or more of the cross-sectional area of the hollow interior in a toe-to-heel direction; the reinforcing member is positioned rearwardly of a shaft connecting portion of the head in a range of $\pm 20\%$ of a distance extending between the face on the front and the rearmost side of the head, with an intermediate position between the face to the rearmost side of the head being assumed to be a reference position; the reinforcing member and the face are provided

essentially in parallel with each other; and the preset space adjacent to a rear surface of the face remains hollow so that so that said face may bend upon striking of a ball.

The remaining claims are dependent from amended claim 1 and are to further limit the scope of the present invention.

The amended point (underlined) is disclosed in paragraph [0026], Figs. 1 and 5, etc. Therefore, it does not include a new matter.

By employing the above-described structure, the wood golf club of the present invention as set forth in amended claim 1 can exhibit the following advantageous effects:

(1) As one or more reinforcing members is/are provided inside the outer shell of the head along a cross-sectional area of the hollow interior defined in a toe-to-heel direction in such a manner protruding toward the hollow interior, a predetermined (preset) distance away from the face in order to define a space therebetween, the deformation of the rear side positioned rearwardly of the reinforcing members, that is, the deformation of the sole and crown is suppressed while the face is effectively bent when striking a ball, thus elongating traveling distance of the ball.

(2) As each of the reinforcing members is frame-shaped having an opening in a center portion thereof, wherein each of the reinforcing members makes up 20% or more of the cross-sectional area, the reinforcing members can be lightened and thus the head can be also lightened entirely, while the deformation of the sole and crown can be prevented fully. The lightening of the head this way makes it possible to enlarge the bulk of the head, and the resultant enlarged bulk of the head leads to the enlarged area of the face and eventually to the enlarged sweet area.

(3) As the reinforcing member is positioned rearwardly of a shaft connecting portion of the head in a range of $\pm 20\%$ of a distance extending between the face on the front and the rearmost side of the head, with an intermediate position between the face to the rearmost side of the head being assumed to be a reference position, the deformation of the

sole and crown can be suppressed in a most effective and reliable manner despite such extremely simple structure that the reinforcing members is tabular.

(4) As the reinforcing member and the face are provided essentially in parallel with each other; and the space adjacent to a rear surface of the face is kept hollow so that any member does not contact the same, the space which allows the face to be bent so as to appropriately apply elastic force to the struck ball can be ensured. Accordingly, the face is effectively bent when striking the ball, thus elongating traveling distance of the ball.

COMPARISON OF THE CLAIMED INVENTION AND THE APPLIED REFERENCES

Cissel discloses a golf club head having a front face 10, a heel, a toe and a reinforcing plate member 16, 22 or 27 of a tabular shaped. This club head, however, is solid and made from wood, and thus it does not employs a structure of the head of the present invention which is hollow and made of metallic shells. Moreover, the reinforcing plate member 16, 22 or 27 is for elongating traveling distance of a ball by transmitting impact to the ball when striking it, while it comprises synthetic resin such as nylon having less compressibility than wood material Col. 2, lines 11-19). Accordingly, the reinforcing plate member 16, 22 or 27 does not exhibit the advantageous effect that the deformation of the sole and crown is suppressed. Further, in Cissel, as there is no space between the face 4 and the plate 16, the effectiveness and working that the face is effectively bent when striking a ball, thereby elongating traveling distance of the ball can be barely expected. In addition, the shape, mounting location or the like of reinforcing plate member of Cissel differ from those of the reinforcing member of the present invention. It is thus obvious that each of the object, structure, effectiveness and working of Cissel completely differ from those of the present invention.

Lundberg teaches the use of reinforcing ribs, the reinforcing ribs being "frame shaped". The reinforcing ribs of Lundberg, however, contact the face, thus preventing the bending of the face when striking the ball. Accordingly, elastic force due to the bending of the face when striking the ball can not be available in order to accelerate an initial velocity of the ball. Moreover, the reinforcing member of the present invention is formed in a tabular shape, while the reinforcing ribs of Lundberg are formed by joining a plurality of "bar-shaped" members. The object and structure of the technique disclosed by Lundberg thus differ from those of the present invention.

Rigal shows on FIG. 3 reinforcement walls 5 which are tabular, and on FIG. 4 reinforcement walls 5 which has openings in the center thereof. However, as is apparent from FIG. 2, etc, the reinforcement walls 5 contact a rear of an impact surface 1, and thus the binding of the face when striking the ball is prevented. The object and structure of the technique disclosed by Rigal thus differ from those of the present invention.

On the other hand, according to the present invention, as one or more reinforcing members is/are provided inside the outer shell of the head along the cross-sectional area of the hollow interior defined in the toe-to-heel direction in such a manner protruding toward the hollow interior, the preset distance away from the face in order to define the space therebetween, the deformation of the rear side positioned rearwardly of the reinforcing members, that is, the deformation of the sole and crown is suppressed while the face is effectively bent when striking a ball, thus elongating traveling distance of the ball.

Besides, as the reinforcing member and the face are provided essentially in parallel with each other; and the space adjacent to a rear surface of the face is kept hollow so that any member do not contact the same, the space, which allows the face to be bent so as to appropriately apply elastic force to the struck ball, can be ensured.

Accordingly, the face is effectively bent when striking the ball, thus elongating traveling distance of the ball.

The references cited by the Examiner do not suggest or teach unique ideas of the present invention that "one or more reinforcing members is/are provided inside the outer shell of the head along the cross-sectional area of the hollow interior defined in the toe-to-heel direction in such a manner protruding toward the hollow interior, the preset distance away from the face in order to define the space therebetween" and "the reinforcing member and the face are provided essentially in parallel with each other; and the space adjacent to a rear surface of the face remains hollow so that said face may bend upon striking of a ball". These unique ideas of the present invention as described above would not have been easily reached by persons skilled in the art, no matter how the disclosures or teachings by the above-cited references are referred to or combined together, since they do not involve any ideas or concepts that could suggest the above subject matter of the present invention.

As described above, the present invention can exhibit the advantageous effects not obvious from the cited references. Therefore, it is strongly believed that the present invention would not have been obvious according to the result of the above-explained comparison. Reconsideration is respectfully requested.

CONCLUSION

In view of the Amendment and Remarks, reconsideration of the application is respectfully requested. Claims 1 and 3-7 are now pending and a Notice of Allowance for these claims is earnestly solicited.

Respectfully submitted,

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